Elemental Scanning Devices Authenticate Works of Art

Marshall Space Flight Center

Bruker Elemental
Madison, WI

NASA Technology

- X-ray fluorescence (XRF) scanners are used to detect the presence of elements, but conventional ones cannot detect the lighter elements, including aluminum, frequently used by NASA.
- The problem is that lighter elements give off weaker x-rays that cannot be registered on the scanners.

Technology Transfer

- A partnership between NASA and KeyMaster Inc. (later acquired by Bruker) solved the problem by developing scanners incorporated with vacuum chambers, which prevented x-rays from dissipating into the air.
- Joint patents were issued, and NASA benefited from the technology while the company launched its Tracer III-SD and Tracer III-V models.

Benefits

- Museums benefit from the scanners, which can authenticate paintings and artifacts by comparing pigments and mediums to verified originals.
- The technology can save people and institutions from spending millions of dollars on forgeries.
- Consumer products like food and medicine are also tested for safety using the technology.